



**Hydrometrics, Inc.**  
consulting scientists and engineers

## MEMORANDUM

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DATE: February 21, 2020

TO: Mr. Loren Cohen, Point Ruston, LLC

FROM: Gregory Lorensen, P.E., Hydrometrics, Inc.  
Adam Jourdonnais, P.E., Hydrometrics, Inc.

SUBJECT: Rust Park Conceptual Design and Cost Estimates

### **PROJECT UNDERSTANDING**

Kristine Koch, EPA Region 10 Project Manager for the Commencement Bay Nearshore/ Tideflats Superfund Site organized a meeting with Rob White, the City of Ruston Washington Planner on January 9, 2020 to discuss property owned by the City of Ruston, known as Rust Park. Rust Park is an existing public park that was constructed atop an old City of Ruston Landfill and is located between 51<sup>st</sup> Street and North Commercial Street, east of North Baltimore Street and west of North Winnifred Street and is shown on Figure 1. It is our understanding that the City of Ruston is currently working with the Burlington Northern Santa Fe Railroad (BNSF) to reallocate the property ownership in this area of the City of Ruston, to provide BNSF with property that incorporates their railroad tracks and land within 30-35 feet of either side of the centerline of the railroad tracks, while providing the City of Ruston with a contiguous parcel on which the City of Ruston can expand Rust Park. A property map that shows the parcels within this area of Ruston is included on Figure 1. In total, the area of land owned by the City of Ruston and BNSF, including City Right of Way (ROW) is approximately 10.8 acres. Based on our understanding and assuming a 60 foot wide railroad ROW, approximately 1.6 acres of this area would be provided to BNSF, while the remaining 9.2 acres would belong to the City of Ruston for the construction of Rust Park. Of this, 0.74 acres are located north of the railroad tracks and south of the 51<sup>st</sup> Street ROW, while the remaining 8.4 acres are located south of the railroad tracks and north of North Commercial Street.

This area of the City of Ruston is part of Operable Unit 04 (OU 04) of the Commencement Bay Nearshore/ Tideflats Superfund Site, which is known as the Ruston/North Tacoma Study Area (Study Area). The Study Area soils were contaminated from airborne emissions from smelting operations. The selected remedy for OU 04 was to reduce potential residential exposure by removal and replacement of contaminated soils from yards, parks, and public right of ways. Contaminated soils from this remedial action were transported and placed on the Former Asarco Smelter Site, which is designated as OU 02. Point Ruston, LLC is in the

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process of redeveloping OU 02 into a mixed-use development and the soils placed on OU 02 from the remedial action of OU 04 have created difficulties in construction, as they cannot bear the structural loads required for building foundations. This has created an excess of OU 04 materials, currently stockpiled on-site, that Point Ruston must manage. One option would be to remove these soils from OU 02 and place them back into OU 04, where they can be used as fill to create a larger Park area for the City of Ruston. During remedial action of OU 04, areas where thick vegetation, steep slopes, and existing infrastructure (ie: roads, railroads, sidewalks) were left in place and not remediated. The majority of the property within the vicinity of Rust Park fell into this category and was therefore never remediated. The City of Ruston and the EPA would like to see this area, located in the center of the City of Ruston, remediated.

The City of Ruston's long-term vision for remediation and revitalization of Rust Park and the hillsides adjacent to the BNSF railroad corridor is to create a larger park, remediate and stabilize the existing slopes, and improve City Infrastructure. The City of Ruston envisions that both sides of the railroad tracks would be terraced by installing terraced retaining walls. Placement and grading of fill materials would create a larger park area. Due to the large volume of fill that would be required, OU 04 yards soils, currently stockpiled on the Point Ruston site could be a good source of fill. The entire area would receive a two foot thick clean cover, in accordance with the remediation requirements of OU-04.

### **CONCEPTUAL DESIGN**

Hydrometrics has completed a conceptual grading design and budget for the project. Due to the size of the project scope, the project has been split between work to be conducted on the North Side of the Railroad Tracks adjacent to 51<sup>st</sup> Street (North Side) and work to be conducted on the South Side of the Railroad Tracks, which included Rust Park (South Side). The work included as part of the conceptual design for the North Side includes clearing and grubbing, tree removal, excavation, soil nail reinforcement, and installation of retaining walls or facing on the soil nail reinforced slope. The work included as part of the conceptual design for the South Side includes several options, both of which include clearing and grubbing, tree removal, grading, soil import and placement, utility construction, and the installation of a two foot thick clean soil cap. Future work not included in the conceptual design includes the landscaping, hardscapes, and structures that would complete Rust Park. As part of the conceptual design, the use of retaining walls on the South Side were determined to be impractical, largely due to cost. However, retaining walls could be installed in the future, as part of the Rust Park improvements.

### ***South Side of the Railroad (Rust Park)***

The City of Ruston would like to improve Rust Park, by adding a significant amount of fill to the existing gully located on the eastern edge of the existing Park. The City of Ruston envisions a park that is closer in elevation to North Commercial Street, has a lower tier that is accessed off Baltimore Street, and that provides a trail from the Park to Baltimore Street. Building on these concepts, two options are presented in this memorandum.

### **Option 1**

Option 1 is limited in scope, in order to provide an option with a smaller overall budget. Option 1 raises the existing park elevation by approximately 3-5 feet, which gets Rust Park to the existing grade of the Park access off North Commercial Street, and increases the usable space in this part of the park from approximately 1.68 acres to 2.98 acres, an increase of approximately 56,600 square feet. The conceptual design for Option 1 does not provide a lower park tier and does not include the construction of a trail. See Figure 2.

Construction of Option 1 would require that approximately 76,000 bank cubic yards of soil be imported from off-site. All of this fill material can be obtained from the stockpiles of OU 04 soil on the Point Ruston Site. The conceptual design creates a uniform 2:1 slope between the railroad tracks on the northern edge of the project and the park. An additional 8,000 cubic yards of clean cover soil and 2,700 cubic yards of topsoil would need to be imported to complete this project. In addition, a storm water system would need to be constructed, where existing stormwater is conveyed in a gully that will be filled in to increase the size of the park. The cost estimate for the construction of Option 1 is \$5,049,639.78, as presented on Table 1.

### **Option 2**

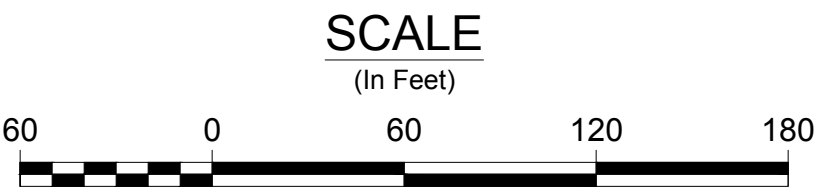
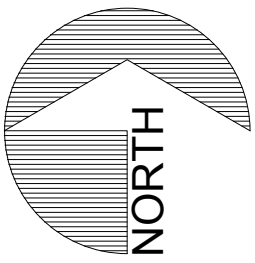
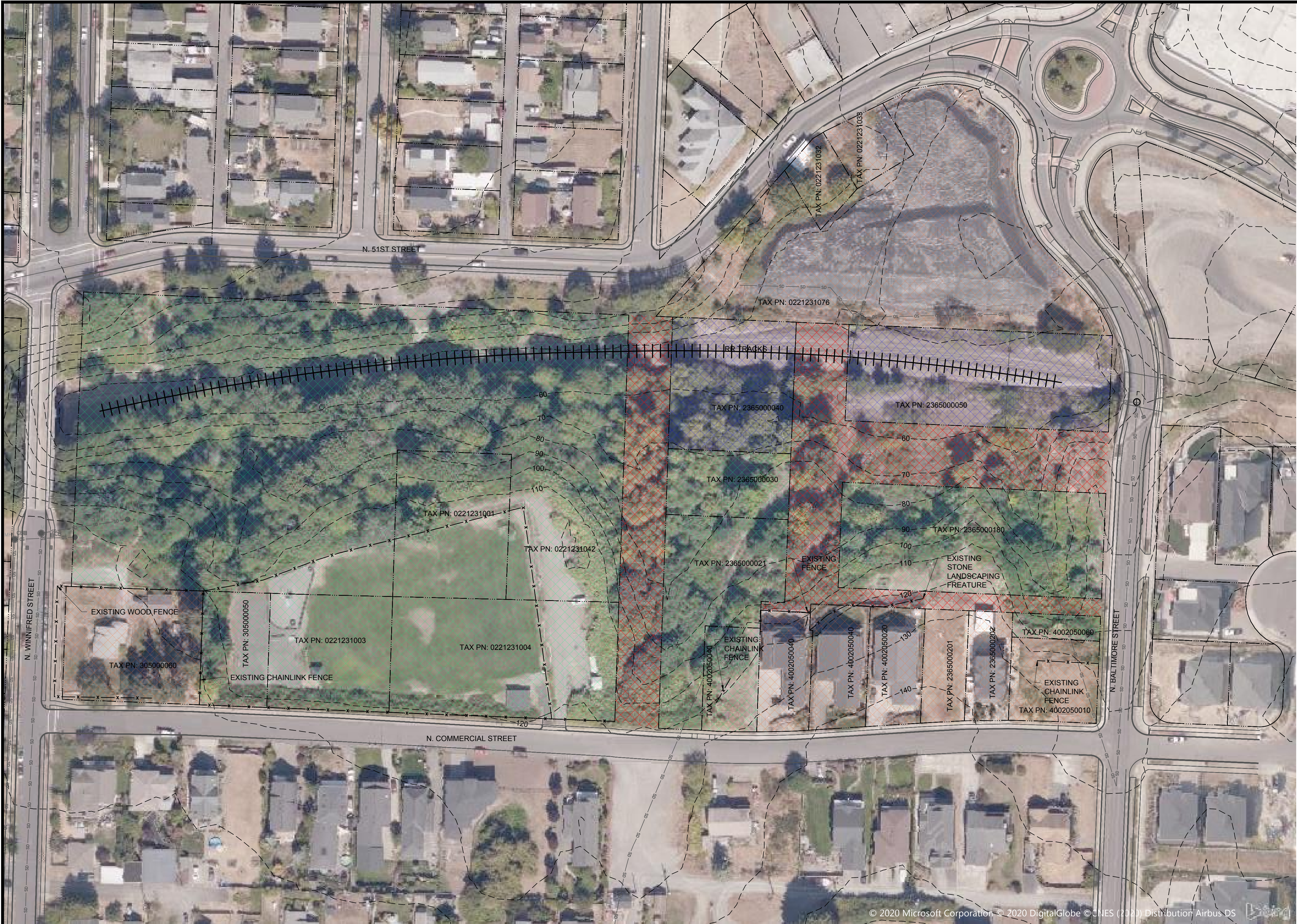
Option 2 raises the existing park elevation by approximately 5 feet, which is closer to the existing grade of the Park access off North Commercial Street, and increases the usable space in this part of the park from approximately 1.68 acres to 2.62 acres, an increase of approximately 39,000 square feet. The conceptual design also provides approximately 0.95 acres on a lower tier, 18-20 feet below the upper park tier grade. See Figure 3.

Construction of this conceptual design would require that approximately 120,000 bank cubic yards of soil be imported from off-site. Approximately  $\frac{3}{4}$  of this fill material can be obtained from the stockpiles of OU 04 soil on the Point Ruston Site, while the remaining soils would need to be sourced from another location. The conceptual design creates a uniform 2:1 slope between the railroad tracks on the northern edge of the project and the park. A trail with a maximum slope of 4.75% is also shown on the conceptual design to connect North Baltimore Street to Rust Park. An additional 20,800 cubic yards of clean cover soil and 7,000 cubic yards of topsoil would need to be imported to complete this project. In addition, a storm water systems would need to be constructed, where existing stormwater is conveyed in two gullies that will be filled in to increase the size of the park. Replacement of a sanitary sewer system adjacent to Baltimore Street may also be necessary. The cost estimate for the construction of Option 2 is \$9,717,753.22, as presented on Table 2. Costs do not include finishes for the construction of the trail, but do include stormwater conveyance for the trail.

### **North Side of the Railroad**

The City of Ruston would like to improve the 51<sup>st</sup> Right of Way (ROW) from Bennett Street to Winnifred Street by increasing the width of the existing improvements from 40 feet to 48 feet. This would require that an additional 8 feet be created at the top of the slope on the South Side of 51<sup>st</sup> Street. For the purposes of this conceptual design, it was assumed that the proposed future ROW improvements would begin on the northern ROW boundary. See Figure 4.

Grading of this area was conducted to determine the overall slope between proposed future 51<sup>st</sup> Street improvements and the existing slope toe, approximately 10-feet north of the railroad tracks. The result is a 1.4 horizontal to 1 vertical (1.4:1) slope below the intersection of 51<sup>st</sup> Street and Bennett. As the slope carries to the west, towards Winnifred Street, its grade decreases to a 1.8:1 slope. Slope stability models for the existing geology in this area suggests that slopes that are steeper than 2:1 are not acceptable and do not carry the appropriate factor of safety for the situation (Arterial Street above the slope and active railroad below the slope). Therefore, a stabilized slope would be required for the North Side of the railroad tracks, to allow for the expansion of the ROW improvements. Options reviewed include gravity walls, MSE walls utilizing horizontal reinforcement, and faced soil nail walls. Limitations including the active roadway, active railroad, and limited space to install horizontal reinforcement reduce the options to a soil nail wall. An estimate of cost was prepared to conduct the grading on this slope and install the soil nail wall. As shown on Table 3, estimated cost to install a soil nail wall and increase the width of the ROW improvements on 51<sup>st</sup> Street is \$11,874,162.84. This cost does not include ROW improvements or any EPA oversight or Project Management costs.



LEGEND

- BSNF TAX PARCEL
- PRIVATE TAX PARCEL
- CITY OF RUSTON TAX PARCEL
- RIGHT-OF-WAY
- CURB AND GUTTER
- SURFACE CONTOURS (FEET)
- RIGHT-OF-WAY
- SANITARY SEWER SYSTEM
- EXISTING FENCE
- MANHOLE
- CATCH BASIN

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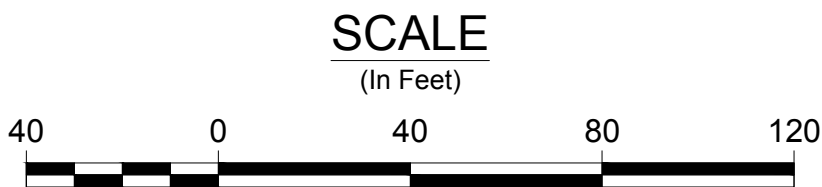
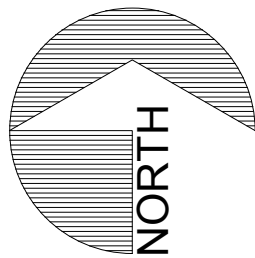
POINT RUSTON, LLC

CONCEPTUAL DESIGN FOR RUST PARK IMPROVEMENTS  
LAND OWNERSHIP MAP AND EXISTING CONDITIONS

FIGURE  
1





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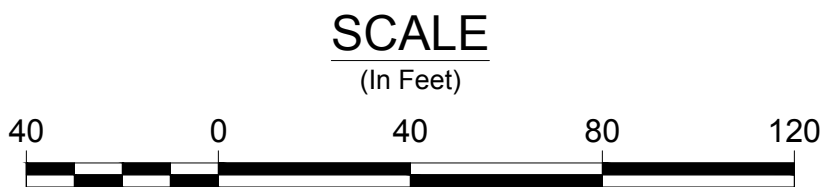
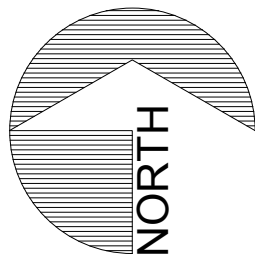
- LEGEND**
- PROPOSED RUST PARK AREA
  - FUTURE 60' WIDE BNSF RIGHT OF WAY
  - EXISTIN CURB AND GUTTER AND SIDEWALK OUTLINES
  - EXISTING SURFACE CONTOURS (FEET) (FROM GOOGLE EARTH)
  - RIGHT-OF-WAY
  - EXISTING FENCE
  - PROPOSED SURFACE CONTOURS (FEET)
  - RR TRACKS

**OPTION 1:**  
EXISTING PARK AREA: 1.68 ACRES  
PROPOSED PARK AREA: 2.98 ACRES  
RAISE PARK ELEVATION 3-5 FEET

REVISIONS	NO	BY	DATE	DESCRIPTION	REVISIONS	NO	BY	DATE	SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING 0 <span style="background-color: black; color: black;">          </span> 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	Project No.:			<b>Hydrometrics, Inc.</b> Consulting Scientists and Engineers  Helena, Montana 59601 3020 Bozeman Avenue (406) 443-4150 	POINT RUSTON, LLC CONCEPTUAL DESIGN FOR RUST PARK IMPROVEMENTS		DRAWING FILE NUMBER		
											DRAWN BY	----				2/21/20	OPTION 1 AUTOCAD 2004 DRAWING (DWG)	
											CHECKED BY				FIGURE		REV	
											APPROVED BY				OPTION 1 - SOIL PLACEMENT OF 80,000 CY		2	
											SCALE: AS NOTED							



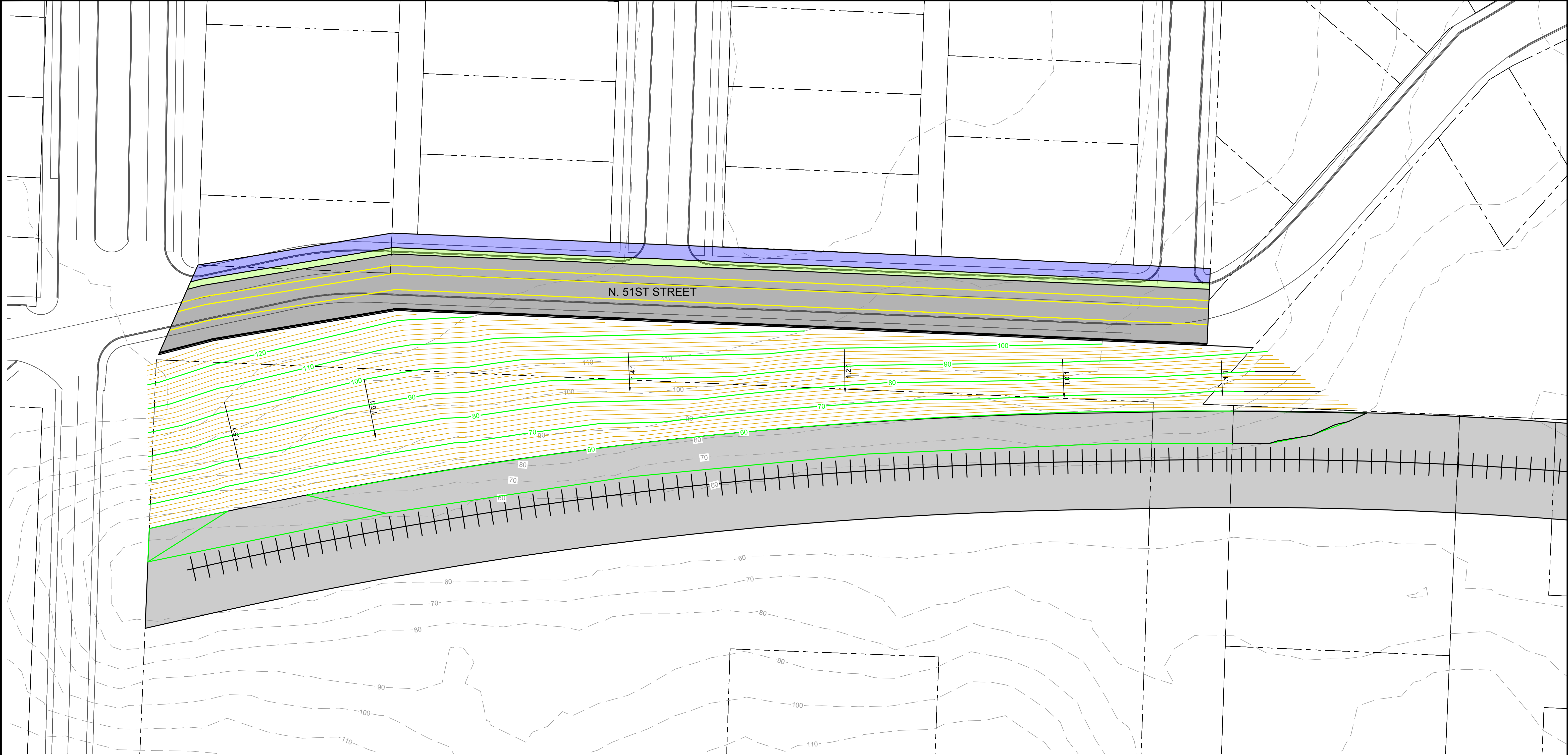
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- LEGEND**
- PROPOSED RUST PARK AREA
  - FUTURE 60' WIDE BNSF RIGHT OF WAY
  - EXISTIN CURB AND GUTTER AND SIDEWALK OUTLINES
  - EXISTING SURFACE CONTOURS (FEET) (FROM GOOGLE EARTH)
  - RIGHT-OF-WAY
  - EXISTING FENCE
  - PROPOSED SURFACE CONTOURS (FEET)
  - RR TRACKS

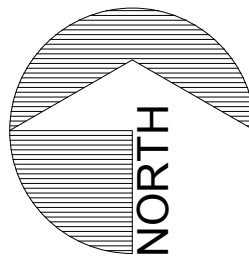
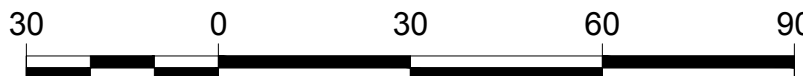
**OPTION 2:**  
EXISTING PARK AREA: 1.68 ACRES  
PROPOSED PARK AREA: 3.57 ACRES  
RAISE UPPER PARK ELEVATION 5 FEET

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- LEGEND**
- PROPOSED SIDEWALK
  - PROPOSED LANDSCAPING
  - PROPOSED ASPHALT
  - FUTURE 60' WIDE BNSF RIGHT OF WAY
  - EXISTIN CURB AND GUTTER AND SIDEWALK OUTLINES
  - EXISTING SURFACE CONTOURS (FEET) (FROM GOOGLE EARTH)
  - RIGHT-OF-WAY
  - EXISTING FENCE
  - PROPOSED SURFACE CONTOURS (FEET)
  - RR TRACKS

SCALE  
(in Feet)



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SCALE:	AS NOTED

**Hydrometrics, Inc.**  
Consulting Scientists and Engineers

Helena, Montana 59601  
3020 Bozeman Avenue  
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POINT RUSTON, LLC	
CONCEPTUAL DESIGN FOR RUST PARK IMPROVEMENTS	
NORTH SIDE IMPROVEMENTS	

DRAWING FILE NUMBER	
NORTH SIDE	
AUTOCAD 2004 DRAWING (DWG)	
FIGURE	REV
4	

Project : RUST PARK CONCEPTUAL DESIGN  
Location: RUSTON, WA

Engineer: Gregory Lorenson, PE

Table 1. South Side of Railroad Tracks - Option 1					
Line # (Means 2020)	Description	Unit Cost	Unit	Qty	Total Cost
[02 21 13.09 - 0100 + 02 21 13.13 - 0400]	Topographical and Boundary Survey	\$ 7,400.00	ac	4.75	\$ 35,147.28
Engineers Estimate	Geotechnical Investigation and Drilling	\$ 20,000.00	ea	1	\$ 20,000.00
Engineers Estimate	Civil and Geotechnical Design	\$ 100,000.00	ea	1	\$ 100,000.00
Engineers Estimate	Erosion and Sediment Control	\$ 25,000.00	ls	1	\$ 25,000.00
Engineers Estimate	Temporary Traffic Control	\$ 142.90	hr	500	\$ 71,450.00
31 14 13.23- 1440	Clearing and Grubbing	\$ 11.50	bcy	3831	\$ 44,060.76
31 11 10.10 - 0300+0350	Tree Removal	\$ 24,525.00	ac	3.15	\$ 77,244.74
40 days for 10hr/day * 2 flagman	BNSF Train Coordination and Flagman Cost	\$ 100.00	hr	800	\$ 80,000.00
Means 2020 Labor and Equipment Rates	Fill from Point Ruston Stockpile and Cooling Pond including load and haul	\$ 23.17	lcy	78660	\$ 1,822,552.20
31 05 13.10 - 0200+0900	Import Fill from Off Site	\$ 28.10	lcy	0	\$ -
31 23 16.46 - 4410	Cut to Fill with Dozer	\$ 8.60	bcy	0	\$ -
(31 23 23.13 - 1700	Fill placement and compaction	\$ 4.09	ecy	76000	\$ 310,840.00
Engineers Estimate	Woven Geotextile	\$ 1.45	sy	23195	\$ 33,632.75
31 05 13.10 - 0200+0900	Cap Cover Soil (Common Borrow) Including Placement	\$ 28.10	lcy	7968	\$ 223,894.48
31 05 13.10 - 0800+0900	Topsoil, Including Haul and Placement	\$ 43.60	lcy	2656	\$ 115,798.33
32 92 19.13 - 1100	Hydroseeding, including wood fiber mulch	\$ 2.55	sy	23996	\$ 61,190.08
Engineers Estimate	New Stormwater System	\$ 60,000.00	ls	1.00	\$ 60,000.00
Engineers Estimate	Sanitary Sewer System Replacement	\$ 40,000.00	ls	-	\$ -
Engineers Estimate	Subsurface Drainage (DS 8 oz 300mil Geocomposite)	\$ 7.00	sy	11597.5	\$ 81,182.50
31 05 16.10 - 0340 + 0900	Drain Gravel	\$ 44.10	cy	-	\$ -
33 31 11.25 - 2040	Perforate Drainage Piping (6-inch DR-35)	\$ 1,700.00	lf	-	\$ -
				Subtotal	\$ 3,161,993.12
Location Factor	Historical Cost Index (Tacoma Wa)	103.7	%	Total	\$ 3,278,986.87
	Sales Tax (9.0%)	9	%		\$ 295,108.82
013113.80-0450	General Contractors Overhead and Profit (Includes Office, Management, and O&P)	15	%		\$ 491,848.03
012116.50-0020	Contingencies	15	%		\$ 491,848.03
Engineers Estimate	Project QA/QC and EPA Project Management	15	%		\$ 491,848.03

Grand Total	\$ 5,049,639.78
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Project : RUST PARK CONCEPTUAL DESIGN  
Location: RUSTON, WA

Engineer: Gregory Lorenson, PE

Table 2. South Side of Railroad Tracks - Option 2					
Line # (Means 2020)	Description	Unit Cost	Unit	Qty	Total Cost
[02 21 13.09 - 0100 + 02 21 13.13 - 0400]	Topographical and Boundary Survey	\$ 7,400.00	ac	7.50	\$ 55,465.00
Engineers Estimate	Geotechnical Investigation and Drilling	\$ 30,000.00	ea	1	\$ 30,000.00
Engineers Estimate	Civil and Geotechnical Design	\$ 150,000.00	ea	1	\$ 150,000.00
Engineers Estimate	Erosion and Sediment Control	\$ 45,000.00	ls	1	\$ 45,000.00
Engineers Estimate	Temporary Traffic Control	\$ 142.90	hr	500	\$ 71,450.00
31 14 13.23- 1440	Clearing and Grubbing	\$ 11.50	bcy	6046	\$ 69,529.00
31 11 10.10 - 0300+0350	Tree Removal	\$ 24,525.00	ac	6	\$ 147,150.00
80 days for 10hr/day * 2 flagman	BNSF Train Coordination and Flagman Cost	\$ 100.00	hr	1600	\$ 160,000.00
Means 2020 Labor and Equipment Rates	Fill from Point Ruston Stockpile and Cooling Pond including load and haul	\$ 23.17	lcy	92000	\$ 2,131,640.00
31 05 13.10 - 0200+0900	Import Fill from Off Site	\$ 28.10	lcy	46000	\$ 1,292,600.00
31 23 16.46 - 4410	Cut to Fill with Dozer	\$ 8.60	bcy	11592	\$ 99,691.20
(31 23 23.13 - 1700	Fill placement and compaction	\$ 4.09	ecy	120000	\$ 490,800.00
Engineers Estimate	Woven Geotextile	\$ 1.45	sy	38059	\$ 55,185.55
31 05 13.10 - 0200+0900	Cap Cover Soil (Common Borrow) Including Placement	\$ 28.10	lcy	20860	\$ 586,153.71
31 05 13.10 - 0800+0900	Topsoil, Including Haul and Placement	\$ 43.60	lcy	6953	\$ 303,146.44
32 92 19.13 - 1100	Hydroseeding, including wood fiber mulch	\$ 2.55	sy	38059	\$ 97,050.45
Engineers Estimate	New Stormwater System	\$ 100,000.00	ls	1.00	\$ 100,000.00
Engineers Estimate	Sanitary Sewer System Replacement	\$ 40,000.00	ls	1.00	\$ 40,000.00
Engineers Estimate	Subsurface Drainage (DS 8 oz 300mil Geocomposite)	\$ 7.00	sy	20000	\$ 140,000.00
31 05 16.10 - 0340 + 0900	Drain Gravel	\$ 44.10	cy	100	\$ 4,410.00
33 31 11.25 - 2040	Perforate Drainage Piping (6-inch DR-35)	\$ 1,700.00	lf	9	\$ 15,810.00
				Subtotal	\$ 6,085,081.35
Location Factor	Historical Cost Index (Tacoma Wa)	103.7	%	Total	\$ 6,310,229.36
	Sales Tax (9.0%)	9	%		\$ 567,920.64
013113.80-0450	General Contractors Overhead and Profit (Includes Office, Management, and O&P)	15	%		\$ 946,534.40
012116.50-0020	Contingencies	15	%		\$ 946,534.40
Engineers Estimate	Project QA/QC and EPA Project Management	15	%		\$ 946,534.40
Grand Total					\$ 9,717,753.22

Project : RUST PARK CONCEPTUAL DESIGN  
Location: RUSTON, WA

Engineer: Gregory Lorenson, PE

Table 3. North Side of Railroad Tracks					
Line # (Means 2020)	Description	Unit Cost	Unit	Qty	Total Cost
[02 21 13.09 - 0100 + 02 21 13.13 - 0400] *1.5 for Conditions	Topographical and Boundary Survey	\$ 11,100.00	ac	1.5	\$ 16,727.21
Engineers Estimate	Geotechnical Investigation and Drilling	\$ 20,000.00	ea	1	\$ 20,000.00
Engineers Estimate	Civil and Geotechnical Design, including wall design	\$ 200,000.00	ea	1	\$ 200,000.00
Engineers Estimate	Erosion and Sediment Control	\$ 10,000.00	ls	1	\$ 10,000.00
Engineers Estimate	Temporary Traffic Control	\$ 25,000.00	ls	1	\$ 25,000.00
31 14 13.23- 1440	Clearing and Grubbing	\$ 11.50	cy	1,216	\$ 13,979.53
31 11 10.10 - 0300+0350	Tree Removal, including stump removal	\$ 24,525.00	ac	1.5	\$ 36,958.09
60 days for 10hr/day * 2 flagman	BNSF Train Coordination and Flagman Cost	\$ 100.00	hr	1,200	\$ 120,000.00
31 23 16.16 - 6250	Excavating Bench Cut	\$ 12.65	bcy	31,275	\$ 395,628.75
31 23 16.16 - 9024	Loading Trucks w/Fill	\$ 1.90	lcy	37,530	\$ 71,213.18
31 23 23.20 - 1214	Haul Fill to Rust Park	\$ 5.05	lcy	37,530	\$ 189,526.50
Engineers Estimate	Soil Nail Wall	\$ 65.76	sf	78,260	\$ 5,146,377.60
Engineers Estimate	Retaining Wall Face Materials	\$ 25.00	sf	78,260	\$ 1,956,500.00
31 23 16.42 - 0260	Excavate Ditch Along RR Tracks	\$ 1.71	cy	500	\$ 855.00
31 37 13.10 - 0011	Line Ditch w/ Rip Rap	\$ 70.00	cy	500	\$ 35,000.00
				Subtotal	\$ 8,237,765.86
Location Factor	Historical Cost Index (Tacoma Wa)	103.7	%	Total	\$ 8,542,563.19
	Sales Tax (9.0%)	9	%		\$ 768,830.69
013113.80-0450	General Contractors Overhead and Profit (Includes Office, Management, and O&P)	15	%		\$ 1,281,384.48
012116.50-0020	Contingencies	15	%		\$ 1,281,384.48
Grand Total					\$ 11,874,162.84